

IN THE CLAIMS:

1. (Currently Amended) An optical fiber having a grating and comprising~~Fiber gratings characterized in that it comprises a core~~of made from silica glass free of germanium and containing 100 to 1000 ppm fluorine and 4 to 7 ppm OH groups and a cladding surrounding the outer periphery of said core thereof, and wherein that said grating is core has gratings written in said core by irradiating said core with a femtosecond laser or picosecond laser radiations.
2. (Cancelled).
3. (Currently Amended) The optical fiber~~Fiber gratings~~ as claimed in claim 1 ~~wherein, which is characterized in that~~ said cladding is made from a silica glass containing 1000 to 7000 ppm of fluorine, or a silica glass containing 2000 to 10000 ppm of boron.
4. (Currently Amended) The optical fiber~~Fiber gratings~~ as claimed in claim 1 ~~wherein, which is characterized in that~~ said cladding comprises plural hollow holes extending in parallel with the optical axis.
5. (Currently Amended) The optical fiber~~Fiber gratings~~ as claimed in claim 1; ~~which is characterized in that~~ wherein said cladding comprises plural hollow holes extending in parallel with the optical axis.
6. (Currently Amended) The optical fiber~~Fiber gratings~~ as claimed in claim 1

~~wherein, which is characterized in that~~ said cladding is provided with a protective coating layer on the outer periphery thereof.

7. (Currently Amended) A method for fabricating an optical fiber with a grating gratings, said method comprising directing ~~characterized in that it comprises~~ irradiating ~~an interference light generated by interfering two coherent femtosecond laser radiations or picosecond laser beams to be coincident, with interference, on radiations to an~~ optical fiber comprising a core made from silica glass free of germanium and containing 100 to 1000 ppm fluorine and 4 to 7 ppm OH groups and a cladding surrounding the outer periphery of said core thereof, thereby writing the grating into gratings in said core.

8. (Currently Amended) A method for fabricating an optical fiber with a grating gratings as claimed in claim 7, further comprising forming ~~which is characterized in that~~ a flat area on part ~~is provided to~~ the outer surface of said cladding, and wherein that said laser beams are coincident on ~~interference light is irradiated to~~ said flat areapart.

9. (Currently Amended) A method for fabricating an optical fiber with a grating gratings as claimed in claim 7 further comprising providing, ~~which is characterized in that~~ a protective coating layer on ~~is provided to~~ the outer periphery of said cladding, and wherein that said laser beams are ~~interference light is irradiated from the outer side of~~ said protective coating layer.

10. (New) The optical fiber as claimed in claim 1 wherein said grating has a period of refractive index of about 100nm to 1 μ m.

11. (New) The optical fiber as claimed in claim 5 wherein said holes constitute 10-60% of the cross-sectional area of the optical fiber.

12. (New) A method for fabricating an optical fiber as claimed in claim 7 further comprising treating said core and cladding with hydrogen.

13. (New) A method for fabricating an optical fiber as claimed in claim 7 further comprising changing the period of gratings by changing the angle of interference of the two laser beams.